CINEMATRIX

Loren Carpenter

Pixar Animation Studios
and
Cinematrix, Inc.

The Essence

- Users hold multi-state retroreflector, or emitter
- Users are imaged by one or more cameras
- Computer extracts color, position, velocity and modulation
- Audience control of computer is real time

Introduced at SIGGRAPH

- 1991 Las Vegas (first time anywhere)
- 1994 Orlando
- 1998 Orlando
- 2003 San Diego (?)

Exciting

- Energizes groups of all sizes
- Instant team building
- Very simple, anyone can do it
- Multilingual simultaneous users
- Proven over 6 years with millions of people

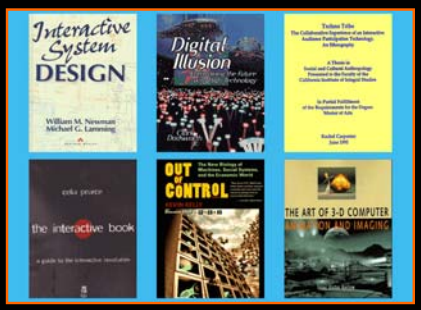
Key Personnel

- Loren Carpenter
  - Inventor
  - ACM Fellow
  - Oscar® Winner
- Rachel Carpenter
  - CEO
  - Anthropologist, MA

Patents

USA	5,210,604 & 5,365,266
EC	92925487.8
Canada	2,124,582
Australia	660753
Brazil	9206897
Singapore	9602979-8
South Korea	150834
Others pending	

Books



Installations

- **Epcot**

- **Millennium Dome**

More Installations

- **Futuroscope**

- **Disney's Bug House**

Even More

- Carnegie Science Center

- Linz, Austria

Corporate Clients

- Ace Medical Systems
- Altered Image
- Avon
- BMW
- Business Improvement Specialists
- Caribiner Communications
- Carnegie Science Center
- Ciba Geigy Pharmaceutical
- Cinemaxx Theaters
- Cisco Systems
- DevlinHair Productions
- Ernst & Young
- Forest Labs
- Galan Communications
- General Services Administration
- Glaxo Pharmaceutical
- Glaxo-Wellcome Pharmaceutical
- GTE
- IBM
- ICE Productions
- Jack Morton Company
- Janssen Pharmaceutical
- Johnson & Johnson
- Kaleidoscope
- KBD Innovative Arts
- LAVA, Hamburg, Germany
- Lincoln-Mercury 75th Anniversary
- Merck & Co.
- National Science Foundation
- National Semiconductor
- Nickelodeon Studios, the U to U show
- Northern Telecom / Nortel
- PGI
- Ray Bloch Productions / PGI
- Rhone-Poulenc-Rorer, Inc
- RJO Group
- Roche Diagnostics
- Roche Pharmaceutical
- Schick
- Sprint
- State of the World Forum, Kevin Kelly
- Strategic Leadership Forum, Richard Pascale
- SUN Microsystems, CTO Conference
- Supercomm
- TBA, Salt Lake
- Thompson / Kerr
- Xerox Parc

Technical Advantages

- Real Time (30-60 samples per second)
- Spontaneous freedom of action
- Reliable (no moving parts)
- Low cost (cheap handheld units)
- Easy to adapt to pre-existing games
- Accurate (high signal to noise)

Unique Input Technology

- Turns a passive audience into active participants.
- The only viable computer input for large groups.
- The only high bandwidth kinesthetic input for small groups.

Other Response Technologies

- Wired seats (voting systems)
  - High installation and maintenance cost
  - Limited application and locations
  - Restricts freedom (no fun)
- Wireless Game controllers
  - Very slow for large groups
  - Restricts freedom (no fun)
- Gesture recognition (research)
  - Noisy, frustrating
  - Low bandwidth

Interactive Digital Cinema

- A digital cinema projector is a computer monitor
- 100 or so today
- Thousands in a decade

Applications Will Be Needed

- Games
- Interactive trailers
- Business meetingware
- Parties

Keep It Simple

- 20 second learning curve
- Color coded tasks
- Onscreen reminders
- Tight feedback
- Adaptive difficulty

Keep It Moving

- Live host helpful
- No hard traps
- Don’t force them to think
- Slowly accelerate

Voting is BAD

- People want to play
- Give them realtime control
- Everyone contributes a little bit all the time
- Avoid flaws of branching movies
  - Dramatis interruptus
  - Statistical ruts
  - Disappointed minority

Further Reading

- www.cinematrix.com/extra
  - TechoTribe.pdf, Rachel Carpenter, 1995
- The Death and Resurrection Show
  - Rogan P. Taylor, London, 1985